

D 11958

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Name.....

Reg. No.....

**THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021**

Common Course (B.Com./B.B.A.)

A11—BASIC NUMERICAL METHODS

(2019—2020 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A

*Answer at least **ten** questions.*

Each question carries 3 marks.

All questions can be attended.

Overall Ceiling 30.

1. What do you mean by time value of money ?
2. What is conversion period ?
3. What is co-efficient of variation ?
4. What is assumed mean method ?
5. What is positive skewness ?
6. What do you mean by mode ?
7. What is geometric progression ?
8. What you mean by kurtosis ?
9. Find the 10th term of the series : 11, 15, 19, 23,....
10. In how many years will a sum of Rs. 4,000 yield a simple interest of Rs. 1,440 at 12 % per annum ?
11. Calculate mean : 11, 4, 6, 6, 8, 9, 3
12. What is co-efficient of range ?
13. What is quartile deviation ?

Turn over

14. Write down the formulae for calculating median from discrete and continuous data ?
15. What do you mean by a system of linear equations ?

(10 × 3 = 30 marks)

Section B

*Answer at least **five** questions.*

Each question carries 6 marks.

All questions can be attended.

Overall Ceiling 30.

16. The arithmetic mean between two numbers is 75 and their geometric mean is 21. Find the numbers.
17. Find the range and coefficient of range of the following data :
43.5, 13.6, 18.9, 38.4, 61.4, 29.8
18. What do you mean by compound interest ? How it is different from simple interest ?
19. If Karl Pearson's co-efficient of skewness is 0.21, mean is 43 and median is 40, find the co-efficient of variation.
20. Mr. Thomas invested an amount of Rs. 13,900 divided in two different schemes A and B at the simple interest rate of 14 % p.a. and 11 % p.a. respectively. If the total amount of simple interest earned in 2 years be Rs. 3508, what was the amount invested in Scheme B ?
21. Mr. Ajmal took a personal loan of Rs. 3,00,000. He is asked to repay the loan in 4 years and rate of interest is 9 % p.a. Calculate EMI amount.
22. Solve the system of equations :
 $2x + 3y = 8$, $3x + 5y = 10$.
23. Find the mean deviation and co-efficient of mean deviation of 3, 6, 6, 7, 8, 11, 15, 16

(5 × 6 = 30 marks)

Section C

*Answer any **two** questions.*

Each question carries 10 marks.

24. What are the requisites of a good average ? List out the merits and demerits of arithmetic mean. Explain the empirical relation between mean, median and mode with a suitable example.

25. If $A = \begin{pmatrix} -3 & 1 \\ -2 & 4 \\ 5 & -1 \end{pmatrix}$ and $B = \begin{pmatrix} 4 & -3 \\ 0 & -2 \\ -2 & 4 \end{pmatrix}$, then what is $3A - 2B$?

26. Solve the following system of equations by using Cramer's rule :

$$2x + y - 2z = -1, \quad 3x - 3y - z = 5, \quad x - 2y + 3z = 6.$$

27. The following data gives the number of vehicles sold by a major Toyota Showroom in a day was recorded for 10 working days. Find the inter quartile range, quartile deviation and its co-efficient :

Day	:	1	2	3	4	5	6	7	8	9	10
Frequency	:	20	15	18	5	10	17	21	19	25	28

(2 × 10 = 20 marks)